

Environmental Protection Agency

§ 86.1772-99

or once the auxiliary power unit turns on, in the case of a hybrid electric vehicle, the accumulated mileage and energy usage of the vehicle from the point where electricity is introduced from the electrical outlet shall be recorded, and the vehicle shall be brought to an immediate stop, thereby concluding the All-Electric Range Test.

(4) *Regenerative braking.* Regenerative braking systems may be utilized during the range test. The braking level, if adjustable, shall be set according to the manufacturer's specifications prior to the commencement of the test. The driving schedule speed and time tolerances specified in paragraph (a)(2) of this section shall not be exceeded due to the operation of the regenerative braking system.

(b) [Reserved]

[62 FR 31242, June 6, 1997. Redesignated and amended at 63 FR 987, Jan. 7, 1998]

§ 86.1771-99 Fuel specifications.

(a) The provisions of § 86.113 apply to this subpart, with the following exceptions and additions.

(1) For light-duty vehicles and light light-duty trucks, gasoline having the specifications listed below may be used in exhaust emission testing as an option to the specifications in § 86.113(a)(1). If a manufacturer elects to utilize this option, exhaust emission testing shall be conducted by the manufacturer with gasoline having the specifications listed in the table in this paragraph (a)(1), and the Administrator shall conduct exhaust emission testing with gasoline having the specifications listed in the table in this paragraph (a)(1). Specifications for non-gasoline fuels and all fuel property test methods are contained in Chapter 4 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996). These requirements are incorporated by reference (see § 86.1). The table follows:

Fuel property	Limit
Octane, (R+M)/2 (min)	91.
Sensitivity (min)	7.5.
Lead, g/gal (max) (No lead added)	0-0.01
Distillation Range, °F	
10 pct. point,	130-150.
50 pct. point,	200-210.

Fuel property	Limit
90 pct. point,	290-300.
EP, maximum	390.
Residue, vol % (max)	2.0.
Sulfur, ppm by wt.	30-40.
Phosphorous, g/gal (max)	0.005.
RVP, psi	6.7-7.0.
Olefins, vol %	4.0-6.0.
Total Aromatic Hydrocarbons (vol %)	22-25.
Benzene, vol %	0.8-1.0.
Multi-Substituted Alkyl Aromatic Hydrocarbons, vol %	12-14.
MTBE, vol %	10.8-11.2.
Additives	See Chapter 4 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996). These procedures are incorporated by reference (see § 86.1).
Copper Corrosion	No. 1.
Gum, Washed, mg/100 ml (max)	3.0.
Oxidation Stability, minutes (min)	1,000.
Specific Gravity	No limit; report to purchaser required.
Heat of Combustion	No limit; report to purchaser required.
Carbon, wt %	No limit; report to purchaser required.
Hydrogen, wt %	No limit; report to purchaser required.

(2) [Reserved]

(b) [Reserved]

[62 FR 31242, June 6, 1997. Redesignated at 63 FR 987, Jan. 7, 1998]

§ 86.1772-99 Road load power, test weight, and inertia weight class determination.

(a) The provisions of § 86.129 apply to this subpart.

(b) The following requirements shall also apply to this subpart:

(1) For electric and hybrid electric vehicle lines where it is expected that more than 33 percent of a vehicle line will be equipped with air conditioning, per § 86.096-24(g)(2) or § 86.1832-01(a) as applicable, that derives power from the battery pack, the road load shall be increased by the incremental horsepower required to operate the air conditioning unit. The incremental increase shall be determined by recording the difference in energy required for a hybrid electric vehicle under all-electric power to complete the running loss test fuel tank temperature profile test sequence without air conditioning and the same vehicle tested over the running loss test fuel tank temperature

profile test sequence with the air conditioning set to the "NORMAL" air conditioning mode and adjusted to the minimum discharge air temperature and high fan speed over the time period needed to perform the test sequence, and converting this value into units of horsepower. Vehicles equipped with automatic temperature controlled air conditioning systems shall be operated in "AUTOMATIC" temperature and fan modes with the system set at 72 deg. F. The running loss test fuel tank temperature profile test sequence is found in § 86.129(d).

(2) [Reserved]

[62 FR 31242, June 6, 1997. Redesignated at 63 FR 987, Jan. 7, 1998, as amended at 64 FR 23924, May 4, 1999]

§ 86.1773-99 Test sequence; general requirements.

(a) The provisions of § 86.130 apply to this subpart.

(b) The following additional requirements shall also apply to this subpart:

(1) For purposes of determining conformity with 50 °F test requirements, the procedures set forth in paragraph (c) of this section shall apply. For all hybrid electric vehicles and all 1995 and subsequent model-year vehicles certifying to running loss and useful life evaporative emission standards, the test sequence specified in subpart B of this part shall apply.

(2) [Reserved]

(c)(1) Following a 12 to 36 hour cold soak at a nominal temperature of 50 °F, emissions of CO and NO_x measured on the Federal Test Procedure (subpart B of this part), conducted at a nominal test temperature of 50 °F, shall not exceed the standards for vehicles of the same emission category and vehicle type subject to a cold soak and emission test at 68 to 86 °F. For all TLEVs, emissions of NMOG and formaldehyde at 50 °F shall not exceed the 50,000 mile certification standard multiplied by a factor of 2.0. For all LEVs, emissions of NMOG and formaldehyde at 50 °F shall not exceed the 50,000 mile certification standard multiplied by a factor of 2.0. For all ULEVs, emissions of NMOG and formaldehyde at 50 °F shall not exceed the 50,000 mile certification standard multiplied by a factor of 2.0. Emissions of NMOG shall be multiplied by a reac-

tivity adjustment factor, if any, prior to comparing with the 50,000 certification standard multiplied by the specified factor. The test vehicles shall not be subject to a diurnal heat build prior to the cold start exhaust test or evaporative emission testing.

(i) For the 50 °F emission test, the nominal preconditioning, soak, and test temperatures shall be maintained within 3 °F of the nominal temperature on an average basis and within 5 °F of the nominal temperature on a continuous basis. The temperature shall be sampled at least once every 15 seconds during the preconditioning and test periods and at least once each 5 minutes during the soak period. A continuous strip chart recording of the temperature with these minimum time resolutions is an acceptable alternative to employing a data acquisition system.

(ii) The test site temperature shall be measured at the inlet of the vehicle cooling fan used for testing.

(iii) The test vehicle may be fueled before the preconditioning procedure in a fueling area maintained within a temperature range of 68 to 86 °F. The preconditioning shall be conducted at a nominal temperature of 50 °F. The requirement to saturate the evaporative control canister(s) shall not apply.

(iv) If a soak area remote from the test site is used, the vehicle may pass through an area maintained within a temperature range of 68 to 86 °F during a time interval not to exceed 10 minutes. In such cases, the vehicle shall be restabilized to 50 °F by soaking the vehicle in the nominal 50 °F test area for six times as long as the exposure time to the higher temperature area, prior to starting the emission test.

(v) The vehicle shall be approximately level during all phases of the test sequence to prevent abnormal fuel distribution.

(2) Manufacturers shall demonstrate compliance with this requirement each year by testing at least three LDV or LDT emission data and/or engineering development vehicles (with at least 4000 miles) which are representative of the array of technologies available in that model year. Only TLEVs, LEVs, and ULEVs are to be considered for testing at 50 °F. It is not necessary to apply deterioration factors (DFs) to